

CBL-104/DIV

AMENDMENTS TO THE CLAIMS

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1 Claim 21. (twice amended) An epitaxial layer, comprising a metal nitride comprising a metal
2 selected from the group consisting of gallium, aluminum and indium, wherein the
3 epitaxial layer is formed by hydride vapor-phase deposition on a buffer layer and wherein
4 the buffer layer comprises a nitride of an element of groups III or IV of the periodic table
5 formed on a substrate by a metal organic chemical vapor deposition (MOCVD) technique
6 ~~other than HVPE.~~

1 Claim 22. (original) The epitaxial layer of claim 21, wherein said epitaxial layer is removed
2 from said buffer layer.

1 Claim 23. (original) The epitaxial layer of claim 21, wherein said epitaxial layer and the
2 buffer layer together comprise an epitaxial layer/buffer layer heterostructure, and the
3 epitaxial layer /buffer layer heterostructure is removed from the substrate.

1 Claim 24. (currently amended) A semiconductor heterostructure, comprising:

2 a) a nitride buffer layer, said buffer layer formed by MOCVD; and

3 b) ~~an~~ a nitride epitaxial layer deposited on said buffer layer, said epitaxial layer
4 formed by HVPE.

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1 Claim 25. (original) The heterostructure of claim 24, wherein said buffer layer comprises a
2 material selected from the group consisting of AlN, InN and GaN, and wherein said
3 buffer layer has a thickness in the range of from about 1.0 nanometer to 1.0 micron.

1 Claim 26. (original) The heterostructure of claim 25, wherein said epitaxial layer comprises
2 a metal nitride comprising at least one metal selected from the group consisting of Ga, Al
3 and In and wherein said epitaxial layer has a thickness in the range of from about 1.0
4 micron to 500 micron.

1 Claim 27. (currently amended) An epitaxial layer ~~prepared according to the method of,~~
2 comprising:

3 a) ~~forming~~ a buffer layer formed on a substrate by CVD;

4 b) ~~forming~~ a cap layer formed on the buffer layer; and

5 c) ~~forming~~ an epitaxial layer formed on the cap layer by hydride vapor-phase
6 epitaxy.

CBL-104/DIV

1 Claim 28. (original) The epitaxial layer of claim 27, wherein the epitaxial layer comprises a
2 nitride comprising an element selected from group III and group IV of the periodic table.

1 Claim 29. (original) The epitaxial layer of claim 27, wherein the substrate comprises a
2 material selected from the group consisting of sapphire, silicon, silicon carbide, gallium
3 arsenide, zinc oxide and magnesium oxide; and the buffer layer comprises aluminum
4 nitride.

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1 Claim 30. (original) The epitaxial layer of claim 28, wherein the cap layer and the epitaxial
2 layer have substantially the same composition.

1 Claim 31. (currently amended) The epitaxial layer of claim 26, 27 wherein the cap layer and
2 the epitaxial layer each comprise a nitride comprising an element selected from the group
3 consisting of group III and group IV elements of the periodic table.

1 Claim 32. (original) The epitaxial layer of claim 27, wherein the cap layer is formed by
2 MOCVD.